Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Genetics Assessment

1. Your sex cells are considered to be
2. Haploid
3. Diploid
4. Triploid
5. Polyploidy
6. During what phase does the cell copy its DNA?
7. Prophase
8. Telophase
9. Cytokenesis
10. Interphase
11. For every egg cell, a female will create 3 \_\_\_\_\_\_\_\_\_\_
12. Spindles
13. Centrioles
14. Chromatids
15. Polar bodies
16. When 2 homologues pair up during meiosis, they form a \_\_\_\_\_\_\_\_\_\_
17. Tetrad
18. Telomere
19. Centromere
20. Polar body

(*circle* ***one*** *of the underlined words*)

1. Mitosis / Meiosis results in identical daughter cells.
2. One / Two / Four / Ten viable sperm are formed from one parent cell.
3. One / Two / Three / Four viable eggs are formed from one parent cell.
4. Body Cells / Gametes perform **mitosis**.
5. Body Cells / Gametes perform **meiosis**.

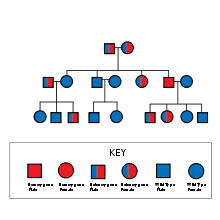
*(Fill in the Blank)*

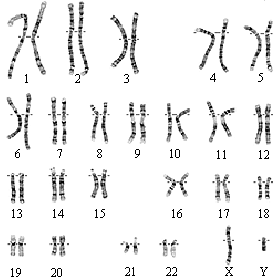
1. If a cell has 12 chromosomes, how many chromosomes will each of its daughter cells have after **mitosis**? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The number of choromosomes in an adult human body cell is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. The number of chromosomes in a human oocyte is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*(Label the picture below)*

What is the purpose of **meiosis**?

1. Kleinfelter Syndrome is when a male has an extra X chromosome. Therefore it is \_\_\_\_\_\_\_\_\_\_.
2. Monogenic and autosomal
3. Monogenic and x-linked
4. Chromosomal
5. Monogenic and y-linked
6. By looking at the following pedigree chart, we can determine grandpa’s disease is:
7. Monogenic and autosomal
8. Monogenic and x-linked
9. Chromosomal
10. Monogenic and y-linked



1. The disease indicated at the right is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Recessive and autosomal
3. X-linked
4. Dominant and autosomal
5. Y-linked
6. Color blindness is present in 1 out of 10 males and 1 out of 100 females. What can you infer about how it is passed down from this statistic?
7. The diagram below is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. What is the sex of the person represented in question 5? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. If there was a third chromosome at 21, what would this irregularity be called? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Chromosomal disorders are caused from chromosomes not separating during meiosis. This is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Which parent determines the child’s gender? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Different forms of a gene are called? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. The physical characteristics of an organism are called its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. In a black and white cow, black is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with white.
15. Why are sex-linked traits so much more common in males?
16. Why is segregation of genes so significant to reproduction?

PUNNETT SQUARES: create a Punnett Square below based on the following stories

1. A blue duck is heterozygous for his body color. He mates and makes babies with an orange duck. Orange is recessive to blue, which is dominant.
2. What % of their offspring will be blue? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Sparky is a dog with very big feet. Every member of his family has always had big feet. Embarrassed by this he wanted to bring recessive small feet into his bloodline. Sparky meets snowball who has small feet, and so has everyone in the history of her family. They make babies.
4. If they have a litter of 16 pups, how many in the F1 generation will carry the gene for small feet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. A scientist is studying water snakes and finds that there are three colors of one species of snake in the wild: brown grey and green. He breeds a brown and a green snake from the wild and finds that ALL of the 46 offspring are grey. This is an example of:
6. Total dominance
7. Co-dominance
8. Partial dominance
9. Independent assortment
10. Who was Gregor Mendel, and how did he contribute to the world of biology
11. How can genetic mutations BENEFIT populations of living things long-term?